

FLOWSTONE AS NATURAL STONE

SIGA KOT NARAVNI KAMEN

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Abstract

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Pavlovec, Rajko & Vesel, Jože: Flowstone as Natural Stone

Flowstone is an interesting ornamental stone exploited from karst spaces. This is why a special attention must be paid to eventual damage caused to karst phenomena.

Key words: geology, stone cutting, karst

Izvleček

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Pavlovec, Rajko & Vesel, Jože: Siga kot naravni kamen

Siga je zanimiv okrasni kamen, ki ga izkoriščajo v kraških predelih. Pri tem je treba še posebej paziti na morebitne poškodbe kraških pojavov.

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INTRODUCTION

In the world the natural stone is a researched building decorative material. At us too it becomes more and more popular and the demand grows. Some parts are tightly connected with the natural stone as the tradition of work and use of natural stone reach far into history. The most expressive such area is Kras where all older houses are built of natural stone. The use of stones from the neighbourhood is extremely well seen on the buildings in the central part of Kras where there are exclusively Cretaceous limestones and people used them only. In Vipava valley the flysch rocks prevail this is why they used flysch sandstones there. On the northern side of Kras is the contact between Cretaceous limestones and Eocene flysch and in the walls of the area limestones and flysch sandstones are met (PAVLOVEC, 1975; KOROŠAK & PAVLOVEC, 1983).

In recent times more distant rocks are used too. The reason lies on one hand in numerous abandoned quarries in Karst and on the other hand on easier transport, widespread industry of natural stone and wish to have a big variety of natural stone to be used by buildings. Therefore it is not astonishing that flowstone is interesting as a natural stone too.

The slovenian geologists have decided together with quarrymen to name natural stone all the rocks which are according to their structure, properties and appearance suitable for elaboration and building. By cutting, carving, polishing and other procedures the natural properties could be stressed but they must not be changed. For natural stone various names were used, f.e. freestone, architecture stone and similar. In contrary to natural stone is technical stone which is used for preparation of aggregates, which is fractured, ground and by other means transformed than were its original properties (VESEL et al., 1992).

Considering the cited description of the natural stone the flowstone belongs there too without regard that it originated by deposition of calcium carbonate from the water in the karst caves, in bigger fissures or smaller cavities. The way of flowstone deposition is important for a natural stone only regarding the quantity of the material which is the basic condition for exploitation of bigger blocks or pieces. Flowstone is composed by bigger, mostly calcite crystals which are coloured regarding various alloys. This is the reason that polished pieces of flowstone have a nice appearance. Some compare it with oak wood (BUSER, 1987).

Quarrymen sometimes call flowstone stalactite which is a wrong expression.

FINDING SITES OF FLOWSTONE IN SLOVENIA

The most of flowstone exploited as a natural stone originated from karstified spaces in Upper Cretaceous rudist limestones in the Littoral. This was near Kostanjevica, Gorjansko, on Fajtji hrib and on Trstelj, it means on Kras and its borders and in smaller extent elsewhere in Slovenia (figs. 1 to 3). The quarries on Kras were active in the first half of this century and about 1960 this activity ended. After rough estimations they got some hundred cubic metres of blocks only, more flowstone was in smaller pieces. Flowstone was not exploited in bigger extent as it is difficult to find vast finding sites without destroying caves or other karst objects.

USE

Because of interesting structure flowstone is an attractive material for walls. It is useful for vertical facing and very bad for floors, stairs or lower parts of the buildings. Nice example of flowstone use is wall in one of the corridors in the Republic Assembly in Ljubljana. The structure with various patterns and colours changing is especially attractive.

Their central window frame in the southern wall of the church in Škocjan near Matavun is made of flowstone too. Quite a big piece of flowstone was used as the carved part of the frame is 110 x 50 cm. Stone frames of other windows



Fig. 1. Block of flowstone near Gorjansko in the Karst region
Sl. 1. Blok sige pri Gorjanskem na Krasu.



Fig. 2. Flowstone wall sawn off in the karst cave near Gorjansko
Sl. 2. Žagana stena sige v kraški jami pri Gorjanskem.

in this church are made of rudist limestone. We can suppose that they met during the construction works to flowstone and used it for one window.

The flowstone was used for the porch of Erasmus hole in the Predjama castle. The biggest elaborated piece is 60 cm long, having in cross section 15 x 20 cm. As it is oval the block it has been cut off, had to be a lot bigger. The flowstone was used for the stairs leading into Erasmus hole too. The stairs are 110 cm long, about 30 cm high and about 20 cm wide. As there are several of them they had to use a lot of flowstone and maybe they got it in the near cave system or maybe in some quarry.

As flowstone is an interesting freestone the danger exists that it could be exploited on the places where the speleological objects could be affected. It



Fig. 3. Pieces of flowstone at Rusa jama near Kostanjevica in the Karst region
Sl. 3. Tomboloni sige pri Rusi jami blizu Kostanjevice na Krasu.
Photo by Danica Pardo / Fotografirala Danica Parlo

could happen especially by increasing interest for natural stone and in particular by augmenting the stonecutting trade. Cut blocks and quarries leave in flowstone formations a permanent wound as flowstone recovers extremely slowly if at all. As far as we know in this direction a bigger damage was not yet done although one have cut, f.e. near Gorjansko the flowstone in a karst space. But the outward form of the there karst space does not bear any particular importance. Without damage the flowstone could be exploited in existing or abandoned quarries if suitable stocks would exist there.

CONCLUSION

Today nowhere in Slovenia flowstone is exploited as a natural stone. But the possibility exists that due to increasing interest for natural stone one would search bigger complexes of flowstone decorated spaces which are all connected with karst phenomena or they are in the karst caves even. As flowstone is a specific species of natural stone having big decorative and scientific value in karst spaces it would be necessary to stop immediately its eventual exploitation until suitable precise professional opinion of geologists, speleologists and nature conservationists is got.

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SIGA KOT NARAVNI KAMEN

Povzetek

Sigo kot naravni kamen so izkoriščali pri Kostanjevici, Gorjanskem, na Fajtjem hribu in Trstlju blizu Komna, torej na Krasu in njegovem obrobju, v manjšem obsegu tudi drugod po Sloveniji (sl.1-3). Kamnolomi na Krasu so obratovali v prvi polovici stoletja, okrog 1960 se je ta dejavnost končala. Po približnih ocenah so pridobili le nekaj sto kubičnih metrov blokov. Sige v večjem obsegu niso izkoriščali, saj je težko dobiti obsežna nahajališča, ne da bi uničili delov jam ali drugih kraških prostorov. Med drugim je siga uporabna za vertikalne obloge, pohodne plošče, stopnice in spodnje dele podzidkov. Lep primer uporabe sige je obloga enega od hodnikov v stavbi Republiške skupščine v Ljubljani. Tam pride posebej do izraza sigina struktura z različnimi vzorci in spreminjanjem barv.

Ker je siga zanimiv okrasni kamen, obstaja nevarnost, da jo začno pridobivati tudi na mestih, kjer bi prizadeli kraške objekte. To se zlasti lahko zgodi ob naraščajočem zanimanju za naravni kamen in še posebno ob širjenju kamnoseškega obrtništva. Odžagani bloki pustijo v sigastih tvorbah trajno rano, saj se siga zelo počasi ali sploh ne obnovi. Kolikor vemo, doslej v tem smislu ni bila narejena večja škoda, čeprav so npr. pri Gorjanskem rezali sigo v kraški jami, toda k sreči le z manjšimi poškodbami kraškega objekta. Brez škode pa bi sigo lahko pridobivali v obstoječih ali tudi opuščenih kamnolomih, če bi v njih našli primerne zaloge.

Dejavnosti, ki bi ogrožale naravno okolje, bi morali skrbno nadzorovati in pridobivanje sige v takih primerih takoj ustaviti. Ker je siga specifična vrsta naravnega kamna, ki ima veliko dekorativno in znanstveno vrednost prav v naravnem okolju, v kraških jamah, je ne bi smeli začeti izkoriščati brez predhodnega strokovnega mnenja geologov, speleologov in naravovarstvenikov.